

## Optical CDMA for CubeSats, Phase II

Completed Technology Project (2017 - 2018)



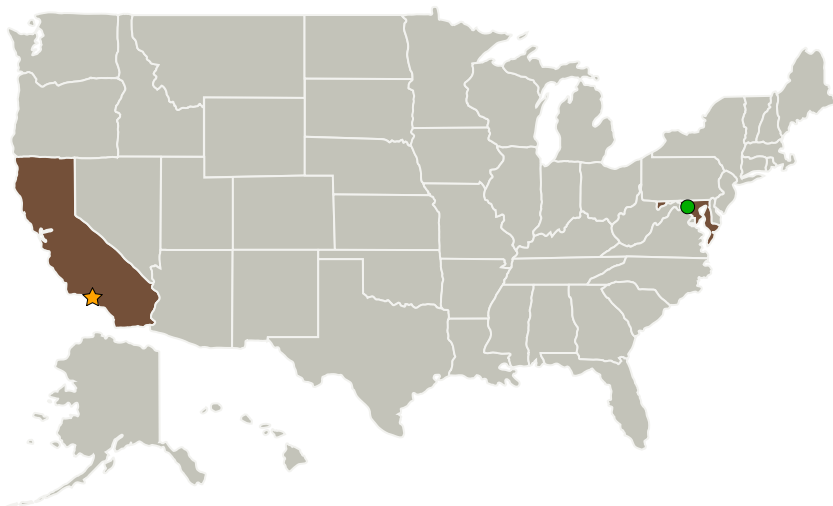
## Project Introduction

Design, develop, and analyze an end to end multiple access optical communication system between a constellation of CubeSats and a ground station for simultaneous communication without coordination.

## Anticipated Benefits

The proposed system has advantages over other types of multiple access systems (TDMA, WDMA, SDMA) and it is not limited to certain scenarios. All transmit lasers and optical receivers at CubeSats could have identical implementation except for the signature codes that separate them.

## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work        | Role                    | Type        | Location             |
|--------------------------------------|-------------------------|-------------|----------------------|
| ★ Jet Propulsion Laboratory (JPL)    | Lead Organization       | NASA Center | Pasadena, California |
| ● Goddard Space Flight Center (GSFC) | Supporting Organization | NASA Center | Greenbelt, Maryland  |



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Jet Propulsion Laboratory (JPL)

**Responsible Program:**

Center Innovation Fund: JPL CIF

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## Primary U.S. Work Locations

California

Maryland

## Project Management

### Program Director:

Michael R Lapointe

### Program Manager:

Fred Y Hadaegh

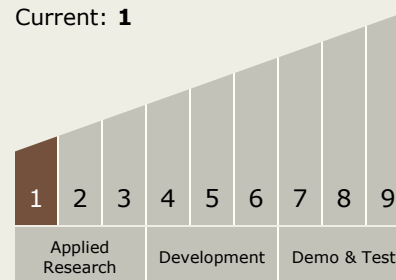
### Principal Investigator:

Darius D Divsalar

## Technology Maturity (TRL)

Start: 1

Current: 1



## Technology Areas

### Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.1 Optical Communications
    - TX05.1.6 Optometrics

## Target Destination

Earth